Public Health
Seattle & King County

HEALTHY PEOPLE. HEALTHY COMMUNITIES.

Alonzo L. Plough, Ph.D., MPH, *Director*

January 25, 2001

(b) (6)
Lynnwood, WA 98036

Dear (b) (6),

The King County Health Department has completed the site hazard assessment (SHA) of the Mike's Aussie Machine Shop site, as required under the Model Toxics Control Act. This site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined to be a **5**, where 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing the ranking of this, and other recently assessed sites in the February 27, 2001 Special Issue of the Site Register. The site hazard ranking will be used in conjunction with other site-specific considerations in determining Ecology's priority for future actions.

Please contact me at (206) 296-4798 if you have any questions relating to the SHA of your site. If you have any inquiries/comments about the site scoring/ranking process, please call Michael Spencer at (360) 407-7195. For inquiries regarding any further activities at your site now that it is on Ecology's Hazardous Sites List, please call Norm Peck at (425) 649-7047.

Sincerely,

Yolanda King, R.S.

Yolanda King, R.S.
Health & Environmental Investigator
Public Health, Seattle King County

YK;sf

cc: Michael Spencer, Washington Department of Ecology
Norm Peck, Washington Department of Ecology

SITE HAZARD ASSESSMENT
WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (Street, City, County, Section/Township/Range, TCP ID Number):

Mike's Aussie Machine Shop
12441 Des Moines Memorial Drive
Seattle, WA 98168
King County
T-23N, R-04E, Sec-09
Ecology Facility Site ID: 2334
Longitude: 122* 18' 36.144"
Latitude: 47* 29' 35.34"
Site assessed for February 27, 2001 update

Site Description (Include management areas, substances of concern, and quantities):

The Mike's Aussie Machine Shop site at the site address of 12441 Des Moines Memorial Drive South is located in a mixed region of residential/commercial areas in south Seattle. At the time of the initial investigation, two auto repair businesses occupied the site. The Boulevard Auto Parts company occupied the front of the building while the Mike's Aussie Machine Shop occupied the back of the building. Currently, Armex, a company which specializes in windows and doors, has inhabited the site location since 1998. The Mike's Aussie Machine Shop business has since relocated across the street at the site address of 12446 Des Moines Memorial Drive South. Although there were references of a septic tank and drainfield on-site, the listed site is currently using the municipal sewer and water systems in its area.

On April 3, 1990, a complaint was made to the Washington State Department of Ecology (Ecology), in regards to dumping solvents directly onto the ground and improper storage of waste oil at the time the Mike's Aussie Machine Shop business was in operation. Although Norm Peck, an Ecology investigator, was unable to see any visual evidence of dumping during his initial investigation on March 5, 1991, he did discover a recent underground storage tank removal performed by the property owner. Mr. Peck also noted that the previous business owner admitted to the fact that the owner prior to him was operating a "hot tank" which was a waste collection tank that discharged into a septic tank and drainfield on-site.

On March 11, 1991, a complaint was called into Ecology's underground storage tank unit regarding a discovery and removal of a 4th tank performed a month ago on the Mike's Aussie Machine Shop site. One hundred cubic yards of soil material was excavated, sampled, and remediated on-site according to Washington Wrecking Company, the tank removal contractor. The current property owner, (b) (6), indicated that the excavated soil was relocated to the unpaved portion of the site along the western boundary.

Because there were concerns of potential contaminants in the septic system and inconclusive gas chromatography sample results of the excavated soil regarding petroleum levels, the site was added onto the Integrated Site Information Systems (ISIS) list of confirmed and suspected contaminated sites by Ecology on March 18, 1991. Mike's Aussie Machine Shop site was listed for suspected non-halogenated solvents, petroleum products, and metals in the soil and groundwater media. Early Notice Letters were sent to the business and property owners on March 26, 1991 regarding the listing of the site.

Yolanda King and Carsten Thomsen of the Public Health - Seattle & King County (PHSKC) conducted a site hazard assessment (SHA) visit on August 30, 2000. The majority of the site has been paved with the exception of the areas along the north and west boundaries west of the building. Along the western side of the building, there was an old oil tank on top of a concrete pad enclosed within a concrete wall. A large, rectangular, rusted oil tank that had some stained soil nearby was discovered west of the building closer towards the northern boundary of the site. Along the western boundary of the site, there were six trailer trucks parked in the area where earlier documentation had indicated that the remediated soil had been placed.

On November 3, 2000, Yolanda King and Carsten Thomsen from PHSKC conducted soil sampling at the Mike's Aussie Machine Shop site. The first two samples were taken at a depth of six to eight inches. The first soil sample was taken directly west of the garage door entrance where the initial investigation had indicated dumping of solvents. Next to the rusted oil tank where there was some stained soil was the location of the second soil sample. The third and fourth samples were collected in the unpaved, western portion of the site towards the back at a depth of eight to ten inches within thirty feet of each other. These last two samples would be in the area where the excavated soil was distributed after removal.

All four soil samples were analyzed for Northwest Total Petroleum Hydrocarbons Diesel Extended (NWTPH-Dx), and total metals. Additional tests for the first and second samples were tested for Volatile Organic Compounds (VOCs) due to the suspected solvents indicated in the initial investigation.

No diesel fuel or VOCs were detected in any of the soil samples. Among the four soil samples tested, most of the metals were not even detected except for very low concentrations of barium, cadmium, chromium, and lead which all detected well below their respective Model Toxics Control Act (MTCA) Method A cleanup levels. Heavy oil was present in only the first three (out of the four) soil samples with levels exceeding the current MTCA Method A cleaup level of 200 ppm (parts per million) for heavy oil as indicated in the table below.

	NWTPH Heavy Oil (ppm)
Sample #1	760
Sample #2	45000
Sample #3	290
Sample #4	ND
MTCA Method A Cleanup Level	200

On the basis of this SHA, completed by the PHSKC's Environmental Health Division, this site will be scored for the surface water and groundwater routes only due to the fact that heavy oil has no toxicity related to the air route.

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) overriding a decision of no further action for the site): N/A

ROUTE SCORES:

Surface Water/Human Health: 6.6

Surface Water/Environ.: NS

Air/Human Health: N/A

Air/Environmental: N/A

Ground Water/Human Health: 10.8

OVERALL RANK: 5

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source: 2

NWTPH-Heavy Oil

Explain basis for choice of substance(s) to be used in scoring.

The above substance concentration is above MTCA Method A Cleanup Standard.

List those management units to be considered for scoring: Source: 2,3

Soil contamination

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

2. AIR ROUTE

List those substances to be considered for scoring: Source:

There will be no score for the air route.

Explain basis for choice of substance(s) to be used in scoring.

List those management units to be considered for scoring: Source:

Explain basis for choice of unit to be used in scoring. Source:

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source: 2

NWTPH-Heavy Oil

Explain basis for choice of substance(s) to be used in scoring.

The above substance concentration is above MTCA Method A Cleanup Standard.

List those management units to be considered for scoring: Source: 2,3

Soil contamination

Explain basis for choice of unit to be used in scoring. Source: 3

Surface soil is exposed to weather with no containment.

WORKSHEET 3
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1.NWTPH-Heavy Oil	ND	-	ND	-	2.0	1	ND	ND	-

*Potency Factor

Source: 1
Highest Value: 1 (Max.=10)

+2 Bonus Points? n/a

Final Toxicity Value: 1 (Max.=12)

1.2 Environmental Toxicity

( ) Freshwater
(X) Marine

Substance	Acute Water Quality Criteria (ug/l)	Value	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1.NWTPH-Heavy Oil	ND	-	ND	-

Source: ____ **Value: NS** (Max.=10)

1.3 Substance Quantity: 800 + 120 = 920 sq ft Source: 2 **Value: 6** (Max.=10)
Explain basis: 2 areas = 20' x 40' and 3' x 40'

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 2 **Value: 10** (Max.=10)
Explain basis: spill/discharge with no containment

2.2 Surface Soil Permeability: silty sand Source: 2 **Value: 3** (Max.=7)

2.3 Total Annual Precipitation: 33.8 inches Source: 4 **Value: 3** (Max.=5)

2.4 Max. 2-Yr/24-hour Precipitation: 1 - 2 inches Source: 4 **Value: 2** (Max.=5)

2.5 Flood Plain: not in flood plain Source: 7 **Value: 0** (Max.=2)

2.6 Terrain Slope: < 2 % Source: 3 **Value: 1** (Max.=5)

WORKSHEET 3 (continued)
SURFACE WATER ROUTE

3.0 TARGETS

3.1 Distance to Surface Water: Class 3 stream=2,627 ft Source: 3 **Value: 4** (Max.=10)

3.2 Population Served within 2 miles (See WARM Scoring Manual Regarding Direction): pop < 0 Source: 5 **Value: 0** (Max.=75)

3.3 Area Irrigated within 2 miles (Refer to note in 3.2.): 0.75 √ no. acres = 0.75(√ 305) = 13 acres Source: 6 **Value: 13** (Max.=30)

3.4 Distance to Nearest Fishery Resource: 11,500 ft Source: 7 **Value: 0** (Max.=12)

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Duwamish River = 11,500 ft Source: 7 **Value: 0** (Max.=12)

4.0 RELEASE

Explain basis for scoring a release to surface water: none confirmed Source: 3 **Value: 0** (Max.=5)

WORKSHEET 4
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1.NWTPH-Heavy Oil	ND	-	ND	-	2.0	1	ND	ND	-

*Potency Factor

Source: 1
Highest Value: 1
(Max.=10)

+2 Bonus Points?
Final Toxicity Value: 1
(Max.=10)

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1= ; 2= ; 3= ; 4= ; 5= ; Source: 1 **Value: 0**
(Max.=3)

OR
Solubility(mg/l): 1 = < 10

1.3 Substance Quantity: 34 cu yds Source: 2 **Value: 2**
Explain basis: 920 sq ft ÷ 27 = 34 cu yds (Max.=10)

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 2 **Value: 10**
Explain basis: spill/discharge; no containment (Max.=10)

2.2 Net Precipitation: 19.2 inches Source: 4 **Value: 2**
(Max.=5)

2.3 Subsurface Hydraulic Conductivity: silty sand Source: 2 **Value: 3**
(Max.=4)

2.4 Vertical Depth to Ground Water: > 300 feet Source: 2 **Value: 1**
(Max.=8)

3.0 TARGETS

3.1 Ground Water Usage: public supply/alt source avail Source: 5 **Value: 4**
(Max.=10)

3.2 Distance to Nearest Drinking Water Well: 1,243 ft Source: 2 **Value: 4**
(Max.=5)

3.3 Population Served within 2 Miles: pop. > 10,000 Source: 2,5 **Value: 100**
(Max.=100)

3.4 Area Irrigated by (Groundwater) Wells
within 2 miles: 0.75 √ no.acres = 0.75 (√ 15) = 4 acres Source: 6 **Value: 4**
(Max.=100)

4.0 RELEASE

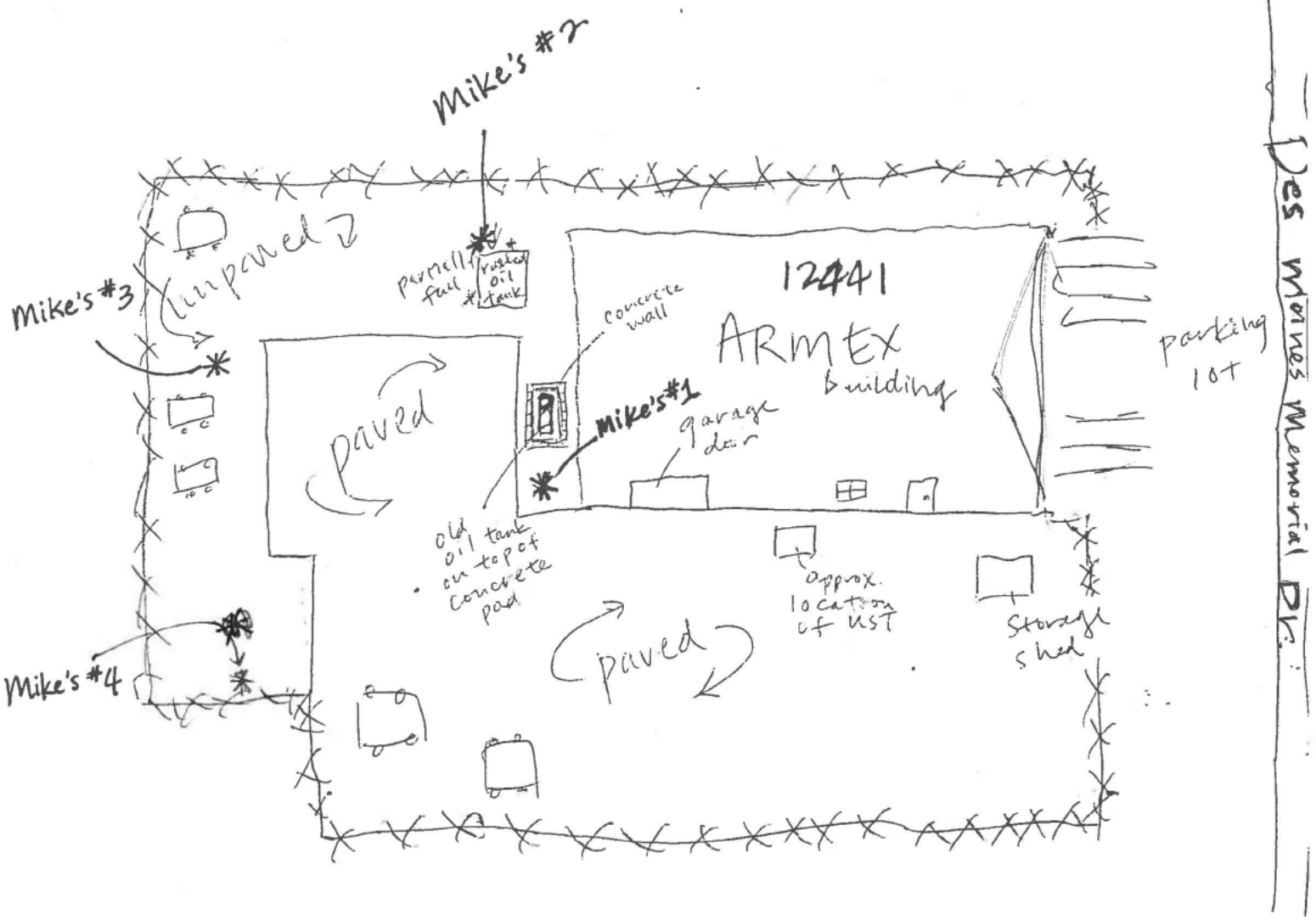
Explain basis for scoring a release to ground water: none confirmed Source: 2 **Value: 0**
(Max.=5)

SOURCES USED IN SCORING

1. Washington Ranking Method Toxicological Database
2. Analytical Results, Mike's Aussie Machine Shop, Onsite Environmental, Inc., November 3, 2000
3. Site Hazard Assessment, Public Health - Seattle & King County, February 27, 2001
4. National Weather Service Data
5. Washington State Department of Health Public Water Supply Listing
6. Washington State Water Use Data
7. Sensitive Areas Coverage, King Co. Geographic Information System Data

Mike's Aussie Machine Shop Site plan

Sampling date: 10/3/00



FIELD SAMPLE SHEET

Property Name: Mike's Aussie Machine Shop
12441 Des Moines Memorial Drive

DATE: Nov. 3, 2000.

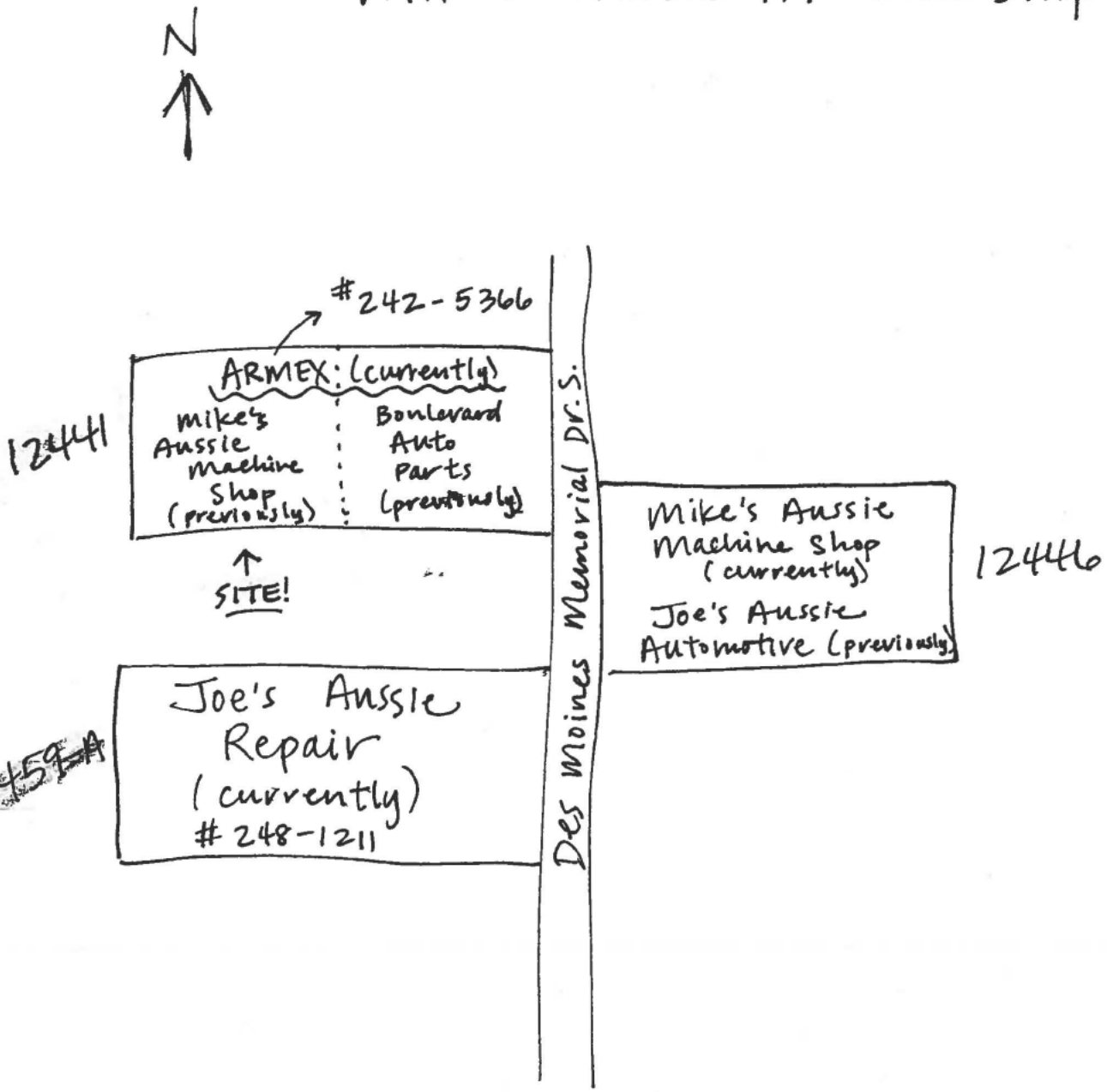
Sample #	Type of Sample	Location / Depth
1. Mike's #1	Soil / NWTPH-Dx, Metals, Volatiles	See other page / 6"-8"
2. Mike's #2	Soil / NWTPH-Dx, Metals, Volatiles	See other page / 6"-8"
3. Mike's #3	Soil / NWTPH-Dx, Metals	See other page / 8"-10"
4. Mike's #4	Soil / NWTPH-Dx, Metals	See other page / 8"-10"
5.		
6.		
7.		
8.		
9.		
10.		

Location Map:

See other page

August 30, 2000

Mike's Aussie Machine Shop



OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

November 14, 2000

Carsten Thomsen
Seattle - King County
Department of Public Health
1st Interstate Center
999 3rd Avenue, Suite 700
Seattle, WA 98104-4099

Re: Analytical Data for Project Mike's Aussie Machine Shop
Laboratory Reference No. 0011-026

Dear Carsten:

Enclosed are the analytical results and associated quality control data for samples submitted on November 3, 2000.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

NWTPH-Dx

Date Extracted:	11-3-00
Date Analyzed:	11-3,4&6-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Client ID:	Mike's #1	Mike's #2	Mike's #3
Lab ID:	11-026-01	11-026-02	11-026-03
Diesel Fuel:	ND	ND	ND
PQL:	28	2900	30
Heavy Oil:	760	45000	290
PQL:	57	5700	60
Surrogate Recovery:			
o-Terphenyl	90%	---	121%
Flags:		S	Y

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

NWTPH-Dx

Date Extracted:	11-3-00
Date Analyzed:	11-3-00
Matrix:	Soil
Units:	mg/Kg (ppm)
Client ID:	Mike's #4
Lab ID:	11-026-04
Diesel Fuel:	ND
PQL:	27
Heavy Oil:	ND
PQL:	54
Surrogate Recovery:	
o-Terphenyl	77%

Flags:

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-3-00
Date Analyzed:	11-6-00
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	MB1103S1
Diesel Fuel:	ND
PQL:	25
Heavy Oil:	ND
PQL:	50
Surrogate Recovery:	
o-Terphenyl	93%
Flags:	Y

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	11-3-00
Date Analyzed:	11-3-00
Matrix:	Soil
Units:	mg/Kg (ppm)

Lab ID:	11-026-04	11-026-04 DUP
Diesel Fuel:	ND	ND
PQL:	25	25
RPD:	N/A	
Surrogate Recovery:		
o-Terphenyl	77%	81%

Flags:

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 11-7-00
Date Analyzed: 11-7-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: 11-026-01
Client ID: Mike's #1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.057
Chloromethane	ND		0.057
Vinyl Chloride	ND		0.057
Bromomethane	ND		0.057
Chloroethane	ND		0.057
Trichlorofluoromethane	ND		0.057
1,1-Dichloroethene	ND		0.057
Acetone	ND		0.28
Carbon Disulfide	ND		0.057
Methylene Chloride	ND		0.28
(trans) 1,2-Dichloroethene	ND		0.057
1,1-Dichloroethane	ND		0.057
Vinyl Acetate	ND		0.28
2,2-Dichloropropane	ND		0.057
(cis) 1,2-Dichloroethene	ND		0.057
2-Butanone	ND		0.28
Chloroform	ND		0.057
1,1,1-Trichloroethane	ND		0.057
Carbon Tetrachloride	ND		0.057
1,1-Dichloropropene	ND		0.057
Benzene	ND		0.057
1,2-Dichloroethane	ND		0.057
Trichloroethene	ND		0.057
1,2-Dichloropropane	ND		0.057
Dibromomethane	ND		0.057
Bromodichloromethane	ND		0.057
2-Chloroethyl Vinyl Ether	ND		0.28
(cis) 1,3-Dichloropropene	ND		0.057
Toluene	ND		0.057
(trans) 1,3-Dichloropropene	ND		0.057
1,1,2-Trichloroethane	ND		0.057
Tetrachloroethene	ND		0.057
1,3-Dichloropropane	ND		0.057

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 11-026-01
Client ID: Mike's #1

Compound	Results	Flags	PQL
Methyl Isobutyl Ketone	ND		0.28
Dibromochloromethane	ND		0.057
1,2-Dibromoethane	ND		0.057
Chlorobenzene	ND		0.057
1,1,1,2-Tetrachloroethane	ND		0.057
Ethylbenzene	ND		0.057
m,p-Xylene	ND		0.11
o-Xylene	ND		0.057
Styrene	ND		0.057
Bromoform	ND		0.057
Isopropylbenzene	ND		0.057
Bromobenzene	ND		0.057
1,1,2,2-Tetrachloroethane	ND		0.057
1,2,3-Trichloropropane	ND		0.057
n-Propylbenzene	ND		0.057
2-Chlorotoluene	ND		0.057
4-Chlorotoluene	ND		0.057
1,3,5-Trimethylbenzene	ND		0.057
tert-Butylbenzene	ND		0.057
1,2,4-Trimethylbenzene	ND		0.057
sec-Butylbenzene	ND		0.057
1,3-Dichlorobenzene	ND		0.057
p-Isopropyltoluene	ND		0.057
1,4-Dichlorobenzene	ND		0.057
1,2-Dichlorobenzene	ND		0.057
n-Butylbenzene	ND		0.057
1,2-Dibromo-3-chloropropane	ND		0.28
1,2,4-Trichlorobenzene	ND		0.057
Hexachlorobutadiene	ND		0.28
Naphthalene	ND		0.057
1,2,3-Trichlorobenzene	ND		0.057

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	88	65-125
Toluene-d8	96	77-116
4-Bromofluorobenzene	98	67-133

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

VOLATILES by EPA 8260B
Page 1 of 2

Date Extracted: 11-7-00
Date Analyzed: 11-7-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: 11-026-02
Client ID: Mike's #2

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.057
Chloromethane	ND		0.057
Vinyl Chloride	ND		0.057
Bromomethane	ND		0.057
Chloroethane	ND		0.057
Trichlorofluoromethane	ND		0.057
1,1-Dichloroethene	ND		0.057
Acetone	ND		0.29
Carbon Disulfide	ND		0.057
Methylene Chloride	ND		0.29
(trans) 1,2-Dichloroethene	ND		0.057
1,1-Dichloroethane	ND		0.057
Vinyl Acetate	ND		0.29
2,2-Dichloropropane	ND		0.057
(cis) 1,2-Dichloroethene	ND		0.057
2-Butanone	ND		0.29
Chloroform	ND		0.057
1,1,1-Trichloroethane	ND		0.057
Carbon Tetrachloride	ND		0.057
1,1-Dichloropropene	ND		0.057
Benzene	ND		0.057
1,2-Dichloroethane	ND		0.057
Trichloroethene	ND		0.057
1,2-Dichloropropane	ND		0.057
Dibromomethane	ND		0.057
Bromodichloromethane	ND		0.057
2-Chloroethyl Vinyl Ether	ND		0.29
(cis) 1,3-Dichloropropene	ND		0.057
Toluene	ND		0.057
(trans) 1,3-Dichloropropene	ND		0.057
1,1,2-Trichloroethane	ND		0.057
Tetrachloroethene	ND		0.057
1,3-Dichloropropane	ND		0.057

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

VOLATILES by EPA 8260B
Page 2 of 2

Lab ID: 11-026-02
Client ID: Mike's #2

Compound	Results	Flags	PQL
Methyl Isobutyl Ketone	ND		0.29
Dibromochloromethane	ND		0.057
1,2-Dibromoethane	ND		0.057
Chlorobenzene	ND		0.057
1,1,1,2-Tetrachloroethane	ND		0.057
Ethylbenzene	ND		0.057
m,p-Xylene	ND		0.11
o-Xylene	ND		0.057
Styrene	ND		0.057
Bromoform	ND		0.057
Isopropylbenzene	ND		0.057
Bromobenzene	ND		0.057
1,1,2,2-Tetrachloroethane	ND		0.057
1,2,3-Trichloropropane	ND		0.057
n-Propylbenzene	ND		0.057
2-Chlorotoluene	ND		0.057
4-Chlorotoluene	ND		0.057
1,3,5-Trimethylbenzene	ND		0.057
tert-Butylbenzene	ND		0.057
1,2,4-Trimethylbenzene	ND		0.057
sec-Butylbenzene	ND		0.057
1,3-Dichlorobenzene	ND		0.057
p-Isopropyltoluene	ND		0.057
1,4-Dichlorobenzene	ND		0.057
1,2-Dichlorobenzene	ND		0.057
n-Butylbenzene	ND		0.057
1,2-Dibromo-3-chloropropane	ND		0.29
1,2,4-Trichlorobenzene	ND		0.057
Hexachlorobutadiene	ND		0.29
Naphthalene	ND		0.057
1,2,3-Trichlorobenzene	ND		0.057

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	86	65-125
Toluene-d8	98	77-116
4-Bromofluorobenzene	97	67-133

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Date Extracted: 11-7-00
Date Analyzed: 11-7-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: MB1107S1

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.050
Chloromethane	ND		0.050
Vinyl Chloride	ND		0.050
Bromomethane	ND		0.050
Chloroethane	ND		0.050
Trichlorofluoromethane	ND		0.050
1,1-Dichloroethene	ND		0.050
Acetone	ND		0.25
Carbon Disulfide	ND		0.050
Methylene Chloride	ND		0.25
(trans) 1,2-Dichloroethene	ND		0.050
1,1-Dichloroethane	ND		0.050
Vinyl Acetate	ND		0.25
2,2-Dichloropropane	ND		0.050
(cis) 1,2-Dichloroethene	ND		0.050
2-Butanone	ND		0.25
Chloroform	ND		0.050
1,1,1-Trichloroethane	ND		0.050
Carbon Tetrachloride	ND		0.050
1,1-Dichloropropene	ND		0.050
Benzene	ND		0.050
1,2-Dichloroethane	ND		0.050
Trichloroethene	ND		0.050
1,2-Dichloropropane	ND		0.050
Dibromomethane	ND		0.050
Bromodichloromethane	ND		0.050
2-Chloroethyl Vinyl Ether	ND		0.25
(cis) 1,3-Dichloropropene	ND		0.050
Toluene	ND		0.050
(trans) 1,3-Dichloropropene	ND		0.050
1,1,2-Trichloroethane	ND		0.050
Tetrachloroethene	ND		0.050
1,3-Dichloropropane	ND		0.050

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

VOLATILES by EPA 8260B
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Lab ID: MB1107S1

Compound	Results	Flags	PQL
Methyl Isobutyl Ketone	ND		0.25
Dibromochloromethane	ND		0.050
1,2-Dibromoethane	ND		0.050
Chlorobenzene	ND		0.050
1,1,1,2-Tetrachloroethane	ND		0.050
Ethylbenzene	ND		0.050
m,p-Xylene	ND		0.10
o-Xylene	ND		0.050
Styrene	ND		0.050
Bromoform	ND		0.050
Isopropylbenzene	ND		0.050
Bromobenzene	ND		0.050
1,1,2,2-Tetrachloroethane	ND		0.050
1,2,3-Trichloropropane	ND		0.050
n-Propylbenzene	ND		0.050
2-Chlorotoluene	ND		0.050
4-Chlorotoluene	ND		0.050
1,3,5-Trimethylbenzene	ND		0.050
tert-Butylbenzene	ND		0.050
1,2,4-Trimethylbenzene	ND		0.050
sec-Butylbenzene	ND		0.050
1,3-Dichlorobenzene	ND		0.050
p-Isopropyltoluene	ND		0.050
1,4-Dichlorobenzene	ND		0.050
1,2-Dichlorobenzene	ND		0.050
n-Butylbenzene	ND		0.050
1,2-Dibromo-3-chloropropane	ND		0.25
1,2,4-Trichlorobenzene	ND		0.050
Hexachlorobutadiene	ND		0.25
Naphthalene	ND		0.050
1,2,3-Trichlorobenzene	ND		0.050

Surrogate	Percent Recovery	Control Limits
Dibromofluoromethane	90	65-125
Toluene-d8	99	77-116
4-Bromofluorobenzene	97	67-133

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

VOLATILES by EPA 8260B
MS/MSD QUALITY CONTROL

Date Extracted: 11-7-00
Date Analyzed: 11-7-00

Matrix: Soil
Units: mg/Kg (ppm)

Lab ID: 11-050-04

Compound	Spike Amount	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
1,1-Dichloroethene	2.50	1.95	78	2.01	80	2.9	
Benzene	2.50	2.09	84	2.17	87	3.9	
Trichloroethene	2.50	2.29	92	2.27	91	1.2	
Toluene	2.50	2.31	92	2.30	92	0.42	
Chlorobenzene	2.50	2.42	97	2.45	98	1.2	

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-6,9&13-00
Date Analyzed: 11-6,7,8,10&13-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 10-026-01
Client ID: Mike's #1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	11
Barium	6010B	**80**	2.8
Cadmium	6010B	**2.0**	0.57
Chromium	6010B	**20**	0.57
Lead	6010B	**96**	5.7
Mercury	7471A	**ND**	0.28
Selenium	6010B	**ND**	11
Silver	6010B	**ND**	0.57

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-6,9&13-00
Date Analyzed: 11-6,7,8,10&13-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-026-02
Client ID: Mike's #2

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	11
Barium	6010B	**140**	2.9
Cadmium	6010B	**0.62**	0.57
Chromium	6010B	**23**	0.57
Lead	6010B	**140**	5.7
Mercury	7471A	**ND**	0.29
Selenium	6010B	**ND**	11
Silver	6010B	**ND**	0.57

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-6,9&13-00
Date Analyzed: 11-6,7,8,10&13-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-026-03
Client ID: Mike's #3

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	12
Barium	6010B	**110**	3.0
Cadmium	6010B	**ND**	0.60
Chromium	6010B	**28**	0.60
Lead	6010B	**52**	6.0
Mercury	7471A	**ND**	0.30
Selenium	6010B	**ND**	12
Silver	6010B	**ND**	0.60

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

TOTAL METALS
EPA 6010B/7471A

Date Extracted: 11-6,9&13-00
Date Analyzed: 11-6,7,8,10&13-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-026-04
Client ID: Mike's #4

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	11
Barium	6010B	**66**	2.7
Cadmium	6010B	**ND**	0.54
Chromium	6010B	**22**	0.54
Lead	6010B	**6.3**	5.4
Mercury	7471A	**ND**	0.27
Selenium	6010B	**ND**	11
Silver	6010B	**ND**	0.54

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-6,9&13-00
Date Analyzed:	11-6,7,8,10&13-00
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1106S4/MB1109S1/MB1113S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Barium	6010B	**ND**	2.5
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-6,9&13-00
Date Analyzed: 11-6,7,8,10&13-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-026-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**70.8**	**67.2**	5.2	2.5	
Cadmium	**1.80**	**2.11**	16	0.50	
Chromium	**17.6**	**21.5**	20	0.50	
Lead	**84.9**	**77.4**	9.2	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 11-6,9&13-00
Date Analyzed: 11-6,7,8,10&13-00

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-026-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**98.6**	99	**97.0**	97	1.6	
Barium	100	**157**	86	**161**	90	2.8	
Cadmium	50	**44.7**	86	**46.0**	88	2.8	
Chromium	100	**108**	91	**109**	91	0.88	
Lead	250	**284**	80	**279**	78	1.8	
Mercury	1.0	**0.992**	99	**1.03**	103	4.0	
Selenium	100	**94.7**	95	**93.8**	94	0.95	
Silver	50	**44.7**	89	**43.0**	86	3.9	

Date of Report: November 14, 2000
Samples Submitted: November 3, 2000
Lab Traveler: 11-026
Project: Mike's Aussie Machine Shop

% MOISTURE

Date Analyzed: 11-3-00

Client ID	Lab ID	% Moisture
Mike's #1	11-026-01	12
Mike's #2	11-026-02	13
Mike's #3	11-026-03	16
Mike's #4	11-026-04	8.0

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected at PQL
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Fax: (425) 885-4603 • Phone: (425) 883-3881

Turnaround Request (in working days)

(Check One)

☐ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☒ Standard (Hydrocarbon analyses: 5 days, All other analyses: 7 days)
☐ _____ (other)

Company: King County Health
Project No.:
Project Name: Mike's Aussie Machine Shop
Project Manager: Carsten Thomsen (206) 296-4830

Project Chemist:

Laboratory No. 11-026

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C	PCB's by 8082	Pesticides by 8081	Total RCRA Metals (8)	TCLP Metals	VPH	EPH	% Moisture
	Mike's #1	11/3/00	10:00 & 10:05	S	2			X	X						X				
	Mike's #2	11/3/00	10:15 & 10:20	S	2			X	X						X				
	Mike's #3	11/3/00	10:28	S	1			X							X				
	Mike's #4	11/3/00	10:35	S	1			X							X				

RELINQUISHED BY	DATE	RECEIVED BY	DATE
Yolanda King	11/3/00		11/3/00
FIRM: King County Health	TIME: 11:23am	FIRM: OSE Fax	TIME: 11:23
RELINQUISHED BY	DATE	RECEIVED BY	DATE
FIRM	TIME	FIRM	TIME
REVIEWED BY		DATE REVIEWED	

COMMENTS:

Chromatographs with final report ☐

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